Blue H_2O Filtration Pty Ltd
ABN: 98 394 312 823
ACN: 103 763 293
1/11-13 Wells Rd, Oakleigh, Vic, 3166
Phone: (03) 9564 7029 Fax: (03) 9564 7039
Web: www.bhftechnologies.com.au
Email: info@blueh2o.com.au

SIHA Bentonite G preparation, dosage determination and usage

Change notification

SIHA Bentonite G settles more rapidly than most bentonites. The consequence of this more rapid settling is that it can be easier to get the protein stability dosage determination wrong, and also to have in-tank treatment failures if there is insufficient mixing both in the lab and the cellar. Both of these problems are easily rectified with slight modifications to existing procedures, as indicated below.

Protein stabilisation dosage determination

- Always use a sample for the bentonite determination taken from the current cellar stock.
- When dosing, ensure that the stock solution is continuously and rapidly mixed using a magnetic stirrer bead, as per **Figure 1.**

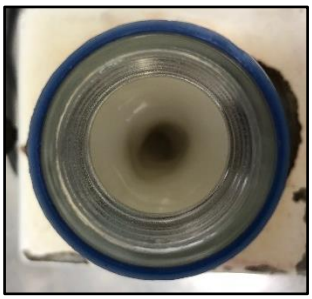
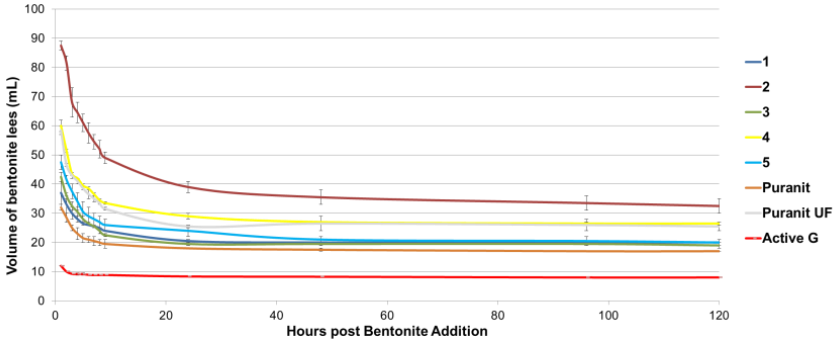


Figure 1. Ensure the stock solution is continuously and rapidly mixed during dosage determination.

- Due to the rapid settling kinetics of SIHA Bentonite G (Figure 2, red trace), the bentonite will settle rapidly in the dosage determination tubes and incomplete ion exchange can occur if they are not mixed well, leading to an overestimation of bentonite required to achieve protein stability. BHF recommends that a lab mixer is used where possible during dosage determination. If a lab mixer is not available, ensure adequate mixing of the dosage determination samples by thoroughly manually inverting each dosage vessel several times for 1 minute at least every 10 minutes for 1 hour.



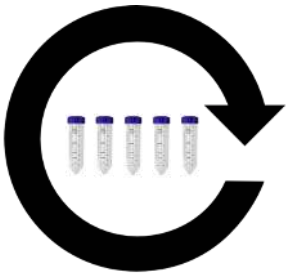


Figure 2: Bentonite settling kinetics. SIHA Bentonite G at bottom in red.

Usage notes

1. If decanting the supernatant from the stock mixture in the cellar: Increase stabilisation dosage by 5-10 % over the laboratory determination level to counter minor mass losses of fines.
2. Rehydrate SIHA Bentonite G @ 10 % in hot water with stirring for 2 h.
3. Use the whole immediately, or allow the suspension to settle 12-24 h, then decant if desired.
4. To decant: discard liquid above the lower slurry to remove excess water and fines.
5. **Tank application**: Addition is best done via venturi. Ensure vigorous mixing of the tank for at least 1 hour for smaller tanks, longer for larger tanks. Longer mixing gives more reliable protein removal. For smaller tanks a submersible pump is a good option. For larger tanks, cycling the wine valve-to-valve, the use of an impeller or sweeping arm, or nitrogen mixing are good options. If there is incomplete mixing a protein fail will likely result. The best results in big tanks are often achieved when bentonite addition is performed in combination with contact cold settling and constant agitation, noting that low temperatures can slow settling and bentonite action.